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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,558	06/17/2005	Hiromichi Mizuno	59511.00003	7931

32294 7590 05/15/2007  
SQUIRE, SANDERS & DEMPSEY L.L.P.  
14TH FLOOR  
8000 TOWERS CRESCENT  
TYSONS CORNER, VA 22182

EXAMINER
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SHARP, JEFFREY ANDREW

ART UNIT	PAPER NUMBER
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3677

MAIL DATE	DELIVERY MODE
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05/15/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/529,558

Applicant(s)

MIZUNO ET AL.

Examiner

Jeffrey Sharp

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 2/16/2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 3 and 9-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

[1] This action is responsive to Applicant's remarks/amendment/request for continued examination filed on 16 February 2007 with regard to the advisory action mailed on 02 February 2007.

#### ***Status of Claims***

[2] Claims 1-11 are pending. Claims 3, and 9-11 are withdrawn.

#### ***Claim Objections***

[3] Claim 1 was previously objected to because of informalities. Applicant has successfully addressed these issues in the amendment filed on 12 January 2007. Accordingly, the objection has been withdrawn.

#### ***Claim Rejections - 35 USC § 112***

[4] The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

[5] Claims 1-8 were previously rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant has successfully addressed the issues of indefiniteness in the amendment filed on 12 January 2007. Accordingly, the rejection of claims 1-8 under 35 U.S.C. 112, second paragraph has been withdrawn.

***Response to Arguments/Remarks***

[6] Claims 1, 2, and 4-8 were previously rejected under 35 U.S.C. 102(b) as being anticipated by Scott US-3,248,747.

Applicant's arguments/remarks with regard to this rejection have been fully considered, but are moot in view of the following new grounds of rejection.

[7] Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Walther et al. US-6,152,666.

Applicant's arguments/remarks with regard to this rejection have been fully considered, but are moot in view of the following new grounds of rejection.

[8] Claim 2 was previously rejected under 35 U.S.C. 103(a) as being obvious over Scott US-3,248,747 in view of Berman US-2,507,882.

Applicant's arguments/remarks with regard to this rejection have been fully considered, but are moot in view of the following new grounds of rejection.

***New Grounds of Rejection***

***Claim Rejections - 35 USC § 112***

[9] The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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[10] Claims 2 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear in claim 2 what applicant deems "a stem face notched and formed on the diametrical inside from the top of said screw thread". Is the *top*, the crest of the thread, or is the *top*, the flank side of the thread facing the head? The term "the diametrical inside" is not clear and has insufficient antecedent basis. Claim 5 suffers from dependency on deficient claim 2.

In claim 5, it is not clear what the metes and bounds is. Applicant must define a "backward side" to give clarity as to what structure is being claimed. It is suggested that phraseology such as "diametrical inside direction" be rephrased "radially inward" for clarity. Moreover, "the rotating direction" is not definite. Screws rotate both clockwise and counterclockwise for insertion and removal thereof.

Appropriate action is required. Claims 2 and 5 have been treated as they are understood to be definite.

[11] Claims 2, and 4-8 are are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant stated in independent claim 1 that there are a plurality of notch portions (emphasis added). In all dependent claims, it appears Applicant is modifying "said notch portion", "said corner portion", and "said stem face" (emphasis added). It cannot be readily ascertained whether or not Applicant is claiming that "all" notch portions, corner portions, and

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stem faces have the claimed characteristics, or if only one of said notch portions, corner portions, and stem faces has the claimed features.

Claim 8 is also indefinite, because it is not clear if "top" refers to the thread crest, or upper flank surface.

Appropriate action is required. Claims 2 and 4-8 have been treated as they are understood to be definite.

***Claim Rejections - 35 USC § 102***

[12] The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

[13] As they are understood to be definite, claims 1, 2, and 4-8 rejected under 35

U.S.C. 102(e) as being anticipated by Mizuno et al. US-2003/0185649 A1.

In short, and when the claims are given their broadest reasonable interpretation, Mizuno et al. generally discloses the invention as claimed, teaching a tapping screw (1) having a head portion (4), tip portion, and shaft portion having a columnar portion (5) and reduced diameter truncated cone portion (9), said shaft portion having a spiral screw thread, wherein plural notches

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(12) are formed in the circumferential direction and are formed by rolling (product by process limitation, see figure 9), each notch including a rising wall (14) "approximately" perpendicular to the thread (exactness not needed), a notch face (15), and a corner portion (12a), each notch portion being shallow so as to have a core diameter larger than the core diameter of the screw thread, the screw having a stem face (understood to be the outer crest of thread), the corner portion (12a) is in its broadest sense, formed at the "diametrical outside" end of the rising wall (14), since it is located on a "diameter" of the screw/rising wall, and since it is located on the "outside" of the screw/rising wall, and since the corner portion (12a) is located on an "end" of the rising wall (14). Examiner notes that "the diametrical outside of the rising wall" does not equal --the radially outermost end portion of the rising wall--. As it is understood, Mizuno et al. teach the stem face (understood to be the outer crest of the thread) in a position moved a predetermined angle ( $\theta_1$ ,  $\theta_2$ , figure 3), and as it is understood, the thread is "shaved" at the top (understood to be a flat crest). As claim 8 is understood, the notch portions are in the area between the columnar portion (5) and the reduced diameter truncated cone portion (9) of the shaft portion.

### ***Conclusion***

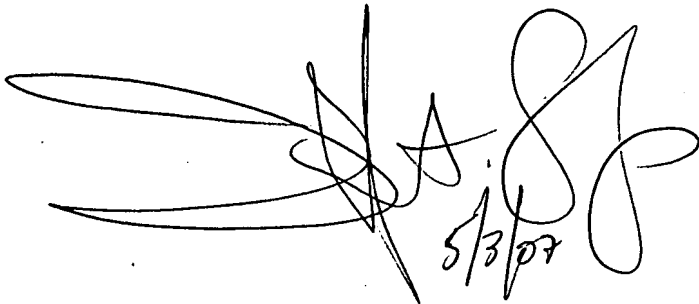
[14] Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey Sharp whose telephone number is (571) 272-7074. The examiner can normally be reached 7:00 am - 5:30 pm Mon-Thurs.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, J.J. Swann can be reached on (571) 272-7075. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JAS



Handwritten signature and date: 5/3/07



ROBERT J. SANDY  
PRIMARY EXAMINER